

IN THE CLAIMS

1.-94. (Canceled)

95. (Currently Amended) A method to quantitate immunoglobulin steroid hormone response inhibitor in a sample aid in predicting susceptibility of an individual to development of an estrogen hormone responsive cancer of a mucosal epithelial tissue comprising:

treating a sample to effectively remove steroid hormones from said sample;

conducting an immunoglobulin steroid hormone inhibition assay by adding the treated sample to a first group of steroid-hormone responsive tumor cells which have been transferred to serum-free media, said cells being from a cultured cell line selected from the group consisting of: T47D; MCF-7A; MCF-7K; ZR-75-1; MTW9/PL2; GH3; GH1; GH4C1; or T47D;

conducting an immunoglobulin steroid hormone inhibition positive control assay by adding a known concentration of plasma immunoglobulin selected from the group consisting of plasma IgA or plasma IgM to a second group of said selected steroid-hormone responsive tumor cells which have been transferred to serum-free media;

determining the concentration at which said treated sample inhibits steroid-hormone mediated cell growth in said inhibition assay;

comparing said inhibition assay concentration to said positive control assay to quantitate the strength of immunoglobulin steroid hormone response inhibitor.

quantitating a level of at least one secreted immunoglobulin, selected from the group consisting of dimeric/polymeric IgA, polymeric IgM, and IgG1; in a secreted body

fluid obtained from said individual, wherein a decrease in the level of said at least one secreted immunoglobulin in said individual in comparison to defined levels of said at least one secreted immunoglobulin, in a health individual, is predictive of increased susceptibility of said individual to development of said estrogen hormone responsive cancer of said mucosal epithelial tissue.

96. (New) A method of detecting a mediator of immunoglobulin inhibition of steroid hormone responsive cell growth wherein the inhibition can be reversed by the steroid hormone, the method comprising:

- obtaining at least two samples of identical mucosal epithelial cultured cells;
- treating one of said cell samples with polymeric IgM;
- leaving one of said cell samples untreated with no addition of polymeric IgM;
- incubating said cell samples under cell growth promoting conditions;
- measuring post-incubation, cell populations in the cell samples; and
- comparing the cell populations doublings of the cell samples wherein a lack of increase in the cell population doublings of the cell sample treated with polymeric IgM with respect to the untreated cell sample indicates presence of the mediator of immunoglobulin inhibition of steroid hormone responsive cell growth.

97. (New) A method of detecting a mediator of immunoglobulin inhibition of steroid hormone responsive cell growth wherein the inhibition can be reversed by the steroid hormone, the method comprising:

- obtaining at least two samples of identical mucosal epithelial cultured cells;

treating one of said cell samples with plasma IgA;
leaving one of said cell samples untreated with no addition of plasma IgA;
incubating said cell samples under cell growth promoting conditions;
measuring post-incubation, cell populations in the cell samples; and
comparing the cell population doublings of the cell samples wherein a lack of
increase in the cell population doublings of the cell sample treated with plasma IgA with
respect to the untreated cell sample indicates presence of the mediator of immunoglobulin
inhibition of steroid hormone responsive cell growth.

98. (New) A method to detect estrogenic activity of a substance of interest, the
method comprising:

adding an inhibitory amount of IgM to at least two samples of a maintained
steroid hormone-responsive cancer cell population in a nutrient medium;

adding an amount of the substance of interest to one of the cell samples to yield a
test mixture;

designating the cell sample without any added substance of interest as a control
mixture;

incubating the cell samples for a period of time under cell growth promoting
conditions;

measuring the cell population in the cell samples after the period of time; and

comparing the test mixture cell population doublings with the control mixture cell
population doublings, wherein a significant increase in cell population doublings in the

test mixture compared with the control mixture indicates that the substance possesses estrogenic activity.

99. (New) A method to detect estrogenic activity of a substance of interest, the method comprising:

adding an inhibitory amount of IgA to at least two samples of a maintained steroid hormone-responsive cancer cell population in a nutrient medium;

adding an amount of the substance of interest to one of the cell samples to yield a test mixture;

designating the cell sample without any added substance of interest as a control mixture;

incubating the cell samples for a period of time under cell growth promoting conditions;

measuring the cell population in the cell samples after the period of time; and

comparing the test mixture cell population doublings with the control mixture cell population doublings, wherein a significant increase in cell population doublings in the test mixture compared with the control mixture indicates that the substance possesses estrogenic activity.

100. (New) A method to detect estrogenic activity of a substance of interest, the method comprising:

adding an inhibitory amount of IgM to at least three samples of a maintained steroid hormone-responsive cancer cell population in a nutrient medium;

adding an amount of the substance of interest to one of the cell samples to yield a test mixture;

adding an amount of estrogen to one of the cell samples to yield a standard mixture;

designating the cell sample without any added substance of interest as a control mixture;

incubating the cell samples for a period of time under cell growth promoting conditions;

measuring the cell population in the cell samples after the period of time; and

comparing the test mixture cell population doublings with the control mixture cell population doublings and comparing the standard mixture cell population doublings with the control mixture cell population doublings, wherein a significant increase in cell population doublings in the test mixture and the standard mixture compared with the control mixture indicates that the substance possesses estrogenic activity.

101. (New) A method to detect estrogenic activity of a substance of interest, the method comprising:

adding an inhibitory amount of IgA to at least three samples of a maintained steroid hormone-responsive cancer cell population in a nutrient medium;

adding an amount of the substance of interest to one of the cell samples to yield a test mixture;

adding an amount of estrogen to one of the cell samples to yield a positive control mixture;

designating the cell sample without said substance of interest or estrogen as a negative control mixture;

incubating the cell samples for a period of time under cell growth promoting conditions;

measuring the cell population in the cell samples after the period of time; and

comparing the test mixture cell population doublings with the negative control mixture cell population doublings and positive control mixture cell population doublings, wherein a significant increase in cell population doublings in the test mixture and the positive control mixture compared with the negative control mixture indicates that the substance possesses estrogenic activity.

102. (New) The method of claim 95 wherein said cells are further selected from the group of cell lines consisting of T47D, MCF-7A, MCF-7K or ZR-75-1.

103. (New) The method of claim 102 wherein said cells are from the T47D cell line.

104. (New) The method of claim 102 wherein said cells are from the ZR-75-1 cell line.

105. (New) The method of claim 102 wherein said cells are further selected from the group consisting of the MCF-7A and MCF-7K cell lines.

106. (New) The method of claim 95 wherein said cells are from the MTW9/PL2 cell line.

107. (New) The method of claim 95 wherein said cells are further selected from the group of cell lines consisting of GH1, GH3 and GH4C1.

108. (New) The method of claim 107 wherein said cells are from the GH4C1 cell line.

109. (New) The method of claim 95 wherein said cells are from the H-301 cell line.